

**AMENDMENTS TO THE CLAIMS**

1-10. (Canceled)

11. (Original) A method, comprising:

- a) providing:
  - i) a patient;
  - ii) an electrocardiogram array;
  - iii) a plurality of intracardiac quadripole catheters, wherein said catheters are configured for simultaneous atrial and ventricular pacing; and
  - iv) a computer configured to receive electrical signals from said catheters;
- b) placing said array on the skin surface of said patient;
- c) inserting said catheters into said patient;
- d) simultaneously pacing said atria and ventricles; and
- e) detecting with said computer an earliest arriving electrical signal.

12. (Original) The method of Claim 11, wherein said earliest arriving electrical signal is from the ventricles.

13. (Original) The method of Claim 11, wherein said earliest arriving electrical signal is from the atria.

14. (Original) The method of Claim 11, wherein said earliest arriving electrical signal is from the junction between the atria and ventricles.

15. (Original) The method of Claim 11, further comprising step f) diagnosing said patient as having ventricular tachycardia.

16. (Currently Amended) The method of Claim [[10]] 11, further comprising step f) diagnosing said patient as having supraventricular tachycardia.

17. (Currently Amended) The method of Claim [[10]] 11, further comprising step f) diagnosing said patient as having atrioventricular nodal reentrant tachycardia.

18. (Currently Amended) The method of Claim [[10]] 11, wherein said computer is connected to a data readout device.

19. (Currently Amended) A method to detect the origin of a cardiac arrhythmia, comprising:

- a) providing:
  - i) a patient exhibiting cardiac arrhythmia;
  - ii) a system comprising a plurality of pacing leads and a plurality of sensing leads;
- b) simultaneously pacing the atria and ventricles of said patient; [[and]]
- c) sensing with said sensing leads said atrial and ventricular electrical activity after said pacing under conditions such that the earliest arriving electrical signal is detected, and
- d) diagnosing said patient as having cardiac tachycardia.

20. (Original) The method of Claim 19, wherein said earliest arriving electrical signal is from the ventricles.

21. (Original) The method of Claim 19, wherein said earliest arriving electrical signal is from the atria.

22. (Original) The method of Claim 19, wherein said earliest arriving electrical signal is from the junction between the atria and ventricles.

23. (Currently Amended) The method of Claim 19, ~~further comprising step d)~~ ~~diagnosing said patient as having~~ wherein said cardiac tachycardia is a ventricular tachycardia.

24. (Currently Amended) The method of Claim 19, ~~further comprising step d)~~ ~~diagnosing said patient as having wherein said cardiac tachycardia is a~~ supraventricular tachycardia.
25. (Currently Amended) The method of Claim 19, ~~further comprising step d)~~ ~~diagnosing said patient as having wherein said cardiac tachycardia is a~~ atrioventricular nodal reentrant tachycardia.
26. (Currently Amended) The method of Claim 19, wherein said system further comprises a computer, wherein said computer is configured to receive signals from said sensing leads and is connected to a data readout device.
27. (New) A method to detect the origin of a cardiac arrhythmia, comprising:
- a) providing:
    - i) a patient exhibiting cardiac arrhythmia;
    - ii) a system comprising a plurality of pacing leads and a plurality of sensing leads;
  - b) simultaneously pacing the atria and ventricles of said patient; and
  - c) sensing with said sensing leads said atrial and ventricular electrical activity after said pacing under conditions such that the earliest arriving electrical signal is detected, wherein said earliest arriving electrical signal is from the junction between the atria and ventricles